IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellant(s): Ezio Valdevit	§	Art Unit: 2471
	§	
	§	Confirmation No.: 1886
	§	
Serial No.: 10/699,588	§	Examiner: Mohammad S. Adhami
	§	
Filed: October 31, 2003	§	Docket No.: 112-0124US
	§	
For: Network Path Tracing Method	§	Customer No.: 85197
	§	

APPEAL BRIEF

Via USPTO EFS
Commissioner for Patents
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Alexandria, VA 22313-1450
Mail Stop: Appeal Briefs – Patents

Appellant hereby submits this Appeal Brief in connection with the above-identified application. A Notice of Appeal is being filed concurrently with this Appeal Brief.

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I. REAL PARTY IN INTEREST

Brocade Communications Systems, Inc. is the real party in interest

II. RELATED APPEALS AND INTERFERENCES

Related application Serial No. 10/699,603 was appealed and an Appeal Brief filed, but prosecution was reopened in response to the Appeal Brief.

III. STATUS OF CLAIMS

Originally filed claims:	1-82.
Added claims:	83-130.
Claim cancellations:	10, 19-54, 64 and 73-82.
Presently pending claims:	1-9, 11-18, 55-63, 65-72 and 83-130.
Presently appealed claims:	1-9, 11-18, 55-63, 65-72 and 83-130.
Presently allowed claims:	None.
Presently objected claims:	None.

IV. STATUS OF AMENDMENTS

No amendments have been made to the subject application subsequent to the Office Action of November 10, 2010 (hereinafter "Office Action").

V. SUMMARY OF CLAIMED SUBJECT MATTER

This section provides a concise explanation of the subject matter defined in each of the independent claims involved in the appeal. Each element of the claims is identified with a corresponding reference to the specification and drawings where applicable. Note that the citation to passages in the specification and drawings for each claim element does not imply that the limitations from the specification and drawings should be read into the corresponding claim element.

Embodiments according to the presently claimed invention provide for systems and methods for gathering troubleshooting information through one or more network. *See* Specification of the subject Application as published (hereinafter "Specification"), Abstract. In at least one embodiment, a switch port is configured to receive a frame that has information added by another switch. *Id.* As the frame traverses the network, control logic in the switch adds additional information into the frame from the current switch. *Id.*

In accordance with the invention of independent claim 1, for example, what is claimed is:

A Fibre Channel switch **(Specification, ¶ [0026], ll. 4-6; and FIG. 2A, switch 20)**, comprising:

a plurality of ports configured to receive and transmit a frame **(Specification, ¶ [0026], l. 8; and FIG. 2A, ports 22-28)**; and

a fabric manager coupled to the plurality of ports **(Specification, ¶ [0026], ll. 9-10; and FIG. 2A, fabric manager 38)** to obtain the received frame **(Specification, ¶ [0053], ll. 8-11)** and to provide a frame to be transmitted **(Specification, ¶ [0056], ll. 6-11; ¶ [0057], ll. 8-12; ¶ [0058], ll. 2-4 and 8-10; and FIG. 6, blocks 636, 640, 642 and 646)**, the fabric manager configured to add information to the frame **(Specification, ¶ [0042], ll. 1-3)**; the information including receive and transmit port identity, the switch identity, and measured transmit and receive rates of the port receiving the frame **(Specification, ¶ [0042], ll. 3-9; and ¶ [0048], ll. 6-10)**; and to provide the frame for transmission **(Specification, ¶ [0056], ll. 6-11; ¶ [0057], ll. 8-12; ¶ [0058], ll. 2-4 and 8-10; and FIG. 6, blocks 636, 640, 642 and 646)**;

wherein the measured transmit and receive rates of the port are determined from an amount of data respectively transmitted and received by the port during a defined time period **(Specification, ¶ [0048], ll. 6-12)**.

In accordance with the invention of independent claim 55, for example, what is claimed is:

A method performed by a Fibre Channel switch **(Specification, ¶ [0026], ll. 4-6; FIG. 2A, switch 20; ¶ [0053], ll. 1-2; and FIG. 6)**, the method comprising:

receiving a frame **(Specification, ¶ [0053], ll. 8-11)**;

determining measured transmit and receive rates of the port receiving the frame from the amount of data respectively transmitted and received by the port during a defined time period **(Specification, ¶ [0048], ll. 6-12)**;

adding information to the frame **(Specification, ¶ [0042], ll. 1-3)**, the information including receive and transmit port identity, the switch identity, and the measured transmit and receive rates of the port receiving the frame **(Specification, ¶ [0042], ll. 3-9; and ¶ [0048], ll. 6-10)**; and

providing the frame to a port for transmission **(Specification, ¶ [0056], ll. 6-11; ¶ [0057], ll. 8-12; ¶ [0058], ll. 2-4 and 8-10; and FIG. 6, blocks 636, 640, 642 and 646)**.

In accordance with the invention of independent claim 83, for example, what is claimed is:

A switch **(Specification, ¶ [0026], ll. 4-6; and FIG. 2A, switch 20)**, comprising:

a fabric manager **(Specification, ¶ [0026], ll. 9-10; and FIG. 2A, fabric manager 38)** configured to add information to a frame **(Specification, ¶ [0042], ll. 1-3)**; the information including receive and transmit port identity, the switch identity, and measured transmit and receive rates of a port receiving the frame **(Specification, ¶ [0042], ll. 3-9; and ¶ [0048], ll. 6-10)**; and to provide the frame for transmission **(Specification, ¶ [0056], ll. 6-11; ¶ [0057], ll. 8-12; ¶ [0058], ll. 2-4 and 8-10; and FIG. 6, blocks 636, 640, 642 and 646)**;

wherein the measured transmit and receive rates of the port are determined from an amount of data respectively transmitted and received by the port during a defined time period **(Specification, ¶ [0048], ll. 6-12)**.

In accordance with the invention of independent claim 99, for example, what is claimed is:

A method performed by a switch **(Specification, ¶ [0026], ll. 4-6; and FIG. 2A, switch 20; ¶ [0053], ll. 1-2; and FIG. 6)**, the method comprising:

determining measured transmit and receive rates of a port receiving a frame from an amount of data respectively transmitted and received by the port during a defined time period **(Specification, ¶ [0048], ll. 6-12)**;

adding information to the frame **(Specification, ¶ [0042], ll. 1-3)**, the information including receive and transmit port identity, the switch identity, and the measured transmit and receive rates of the port receiving the frame **(Specification, ¶ [0042], ll. 3-9; and ¶ [0048], ll. 6-10)**; and

providing the frame to a port for transmission **(Specification, ¶ [0056], ll. 6-11; ¶ [0057], ll. 8-12; ¶ [0058], ll. 2-4 and 8-10; and FIG. 6, blocks 636, 640, 642 and 646)**.

In accordance with the invention of independent claim 115, for example, what is claimed is:

A switch **(Specification, ¶ [0026], ll. 4-6; and FIG. 2A, switch 20)**, comprising:

means for determining measured transmit and receive rates of a port receiving a frame from an amount of data respectively transmitted and received by the port during a defined time period **(Specification, ¶ [0048], ll. 6-12)**;

means for adding information to the frame **(Specification, ¶ [0042], ll. 1-3)**, the information including receive and transmit port identity, the switch identity, and the measured transmit and receive rates of the port receiving the frame **(Specification, ¶ [0042], ll. 3-9; and ¶ [0048], ll. 6-10)**; and

means for providing the frame to a port for transmission **(Specification, ¶ [0056], ll. 6-11; ¶ [0057], ll. 8-12; ¶ [0058], ll. 2-4 and 8-10; and FIG. 6, blocks 636, 640, 642 and 646)**.

In accordance with the invention of dependent claim 125, for example, what is claimed is:

The switch of claim 124, wherein the frame contains source routing information and wherein the port selected to transmit the frame is based on the source routing information **(Specification, ¶ [0057], ll. 4-12; and FIG. 6, blocks 632, 640, and 644)**.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

- Whether claims 1-9, 11-18, 55-63, 65-72, and 83-130 fail to comply with the written description requirements of 35 U.S.C. § 112, first paragraph.
- Whether claims 1, 8, 9, 11, 12,16-18, 55, 62, 63, 65, 66, 70-72, 83, 90-93, 97-99, 106-109, 113-115, 122-125, 129 and 130 are unpatentable under 35 U.S.C. § 103(a) over Cometto (U.S. Pat. No. 7,206,288) in view of Trott (U.S. Pat. App. No. 2009/0028128) and Berman (U.S. Pat. No. 2005/0286551).
- Whether claims 2-7, 56-61, 84-89, 100-105 and 116-121 are unpatentable under 35 U.S.C. § 103(a) over Cometto in view of Trott and Berman as applied to claims 1, 55, 83, 99, and 115 above, and further in view of Soumiya (U.S. Pat. No. 6,671,257).
- Whether claims 13, 67, 94, 110 and 126 are unpatentable under 35 U.S.C. § 103(a) over Cometto in view of Trott as applied to claims 12, 30, 48 and 66 above and further in view of Wong (U.S. Pat. No. 6,363,077).
- Whether claims 14, 68, 95, 111 and 127 are unpatentable under 35 U.S.C. § 103(a) over Cometto in view of Trott as applied to claims 12, 30, 48 and 66, and further in view of Fredericks (U.S. Pat. No. 6,347,334).
- Whether claims 15, 69, 96, 112 and 128 are unpatentable under 35 U.S.C. § 103(a) over Cometto in view of Trott as applied to claims 12, 30, 48 and 66, and further in view of Kanetake (U.S. Pat. App. Pub. No. 2003/0137978).

VII. ARGUMENT

The claims do not stand or fall together. Instead, Appellant presents separate arguments for various independent and dependent claims. After a concise discussion of cited art, each of these arguments is separately argued below and presented with separate headings and subheading as required by 37 CFR § 41.37(c)(l)(vii).

A. The Rejections Under 35 U.S.C. § 112, ¶ 1 of Claims 1-9, 11-18, 55-63, 65-72, and 83-130 for Failing to Comply with the Written Description Requirements

The Office Action rejected claims 1-9, 11-18, 55-63, 65-72, and 83-130 under 35 U.S.C. 135 § 112, first paragraph, as failing to comply with the written description requirement. The Office Action stated that these claims were rejected because they contain subject matter which was not described in the specification in a way to convey to one of skill in the art that the Applicant had possession of the claimed invention. Appellant respectfully traverse this rejection.

The Office Action asserts that amendments in the claims that recite "measured transmit and received rates" lack support in the specification, because although the specification discloses developing a rate, it "does not explicitly disclose measured transmit and received rate[s]." Final Office Action, p. 3. Appellant respectfully disagrees with this characterization of the claim language and the specification. Claim 1 recites, among other things:

> ... the fabric manager configured to add information to the frame; the information including receive and transmit port identity, the switch identity, and **measured transmit and receive rates of the port receiving the frame**; and to provide the frame for transmission;
>
> wherein the **measured transmit and receive rates of the port are determined from an amount of data respectively transmitted and received by the port during a defined time period.**

Emphasis added. Independent claims 55, 83, 99, and 115 include claim language similar to the above highlighted limitations of claim 1. The specification of the present Application teaches developing transmit and receive rates by measuring the number of bytes transmitted and received at input or output ports over a period of time and dividing the number of bytes by the period:

> Basic statistics preferably include the **transmit and receive rates**, in bytes or four byte words, for the input and output ports over a defined short period, and optionally, a long period, based on a setting in the switch and the relevant short and long time periods. The rate is preferably developed by dividing **the number of bytes transmitted or received during the long or short period by the period**.

Published Application, ¶ 48. Emphasis added. A person of skill in the art reading the above passage would understand that in order to develop transmit and receive rates of a port, first the number of bytes that are transmitted and received at the port over a defined period of time is measured. Then, the measured number of bytes is divided by the time period to develop the rates. A person of skill in the art would understand that these developed transmit and received rates are in fact measured rates of transmit and receive bytes per the defined time period. Thus, to say that the specification teaches developing transmit and receive rates but does not disclose measured rates makes no sense. The specification does not need to specifically use the word measured. Measuring the number of bytes is inherent and implied in the method disclosed in the specification.

Moreover, the term "measured transmit and receive rates" is defined in the claim itself. The claim recites "wherein the measured transmit and receive rates of the port are determined from an amount of data respectively transmitted and received by the port during a defined time period." Thus, the term "measured transmit and receive rates" is clearly defined in the claim itself. Accordingly, the Final Office Action's assertion that this claim limitation is not described in such a way as to convey to one skilled in the art that the Appellant was in possession of the claimed invention is incorrect. The Office Action therefore erred in rejecting these claims and Appellant respectfully requests reversal of the rejections of claims 1-9, 11-18, 55-63, 65-72, and 83-130.

B. The Rejections Under 35 U.S.C. § 103(a) of Claims 1, 8, 9, 11, 12,16-18, 55, 62, 63, 65, 66, 70-72, 83, 90-93, 97-99, 106-109, 113-115, 122-125, 129 and 130 as Unpatentable Over Cometto (U.S. Pat. No. 7,206,288) in View of of Trott (U.S. Pat. App. No. 2009/0028128) and Berman (U.S. Pat. No. 2005/0286551)

1. The Rejections of Independent Claims 1, 55, 83, 99 and 115

In rejecting independent claims 1, 55, 83, 99 and 115 as allegedly obvious over Cometto in view of Trott and Berman, the Office Action states:

> Trott discloses adding measured transmit and receive rates of the device receiving the frame to the frame (Para.[0081] the bsLoad field represents the transmit and recieves bit rates of each modem.)
>
> Trott further discloses wherein the measured transmit and receive rates of the device are determined from an amount of data respsecively transmitted and received by the port during a defined time period (Para. [0081] the transmit and receive rates of each modem over a period of a few minutes measured against maximum possible loading.)

Final Office Action, ¶ 1, p. 5. Appellant respectfully traverses this characterization of the cited art noting that the transmit and receive rates taught by Trott are bit rates for modems of a base station in a radio communications network, whereas the claims require transmit and receive rates of a port receiving the frame in a Fibre Channel switch. Trott relates to digital radio signal communications, such as cellular voice communications, and in particular to transmitting different bursts of a broadcast channel with different amounts of reuse. Trott, ¶ [0003] & [0005]. Trott teaches that cellular voice radio systems have several base stations that are available for use by remote terminals such as mobile telephones, and that each base station has a set of assigned broadcast channels for communicating with the remote terminals. Trott, ¶ [005]. In teaching how to increase efficiency of these broadcast channels, Trott mentions taking into account the traffic load of a base station. The passage in Trott cited in the Office Action relates to this traffic load and states:

> **[0081]** The bsLoad field, encoded in p(5) and p(6), gives an indication of the current traffic load of the base station. The four possible values {p(5),p(6)}={00,10,01, 11} indicate light, medium, heavy, and very heavy loading, respectively. BSload is the load on the base station, used by the user terminal to determine how frequently to send random access messages and whether to attempt access. BSload is an indication of the amount of unused capacity the base station has. It can be different from the number of active registered subscribers because subscribers can require different amounts of traffic capacity. BSload represents the transmit and receive bit rates of each modem of the base station over a period of a few minutes measured against maximum possible loading.

This paragraph refers to transmit and receive bit rates of each modem of the base station in the cellular voice radio network. Such transmit and receive rates are not the same as the transmit and receive rates of ports in a Fibre Channel switch.

Moreover, the claim requires adding the measured transmit and receive rates of the port receiving a frame to that frame. The Office Action is silent about how Trott teaches this limitation. Appellant submits that it does not. Trott does not relate to transmission of frames in a Fibre Channel network and does not disclose adding information to the frame. Indeed, Trott defines a special frame type, a B burst, to include the information. Even then the rates are not provided but rather it is a two bit loading factor that is provided. So, even though Trott may calculate the rates, it does not teach adding the rates to any frame, much less one received at the device which is to be retransmitted.

The Office Action acknowledges that Trott does not disclose "the rates of a port" and points to Berman as teaching this limitation. Appellant again disagrees. Berman makes a reference to a port speed as an entry in a context field for a port. However, this link speed does not disclose the transmit and receive rates recited in the claims. The claims clearly set out how transmit and receive rates are determined "from an amount of data respectively transmitted and received by the port during a defined time period." Berman's reference to a port speed does not teach such transmit and receive port rates. Nowhere does Berman teach or even suggest that the

port speed represents both the transmit rate and the receive rate of the port that received the frame, said rates being determined from an amount of data respectively transmitted and received by the port, as required by independent claim 1.

For at least these reasons, Appellant submits that none of the cited references, either alone or together, teaches or suggests all of the limitations of independent claim 1. Further, because independent claims 55, 83, 99 and 115 include limitation similar to claim 1 and were rejected on the same grounds,[1] Appellant submits that none of the limitations of these claims are taught by the cited references. The Office Action therefore erred in rejecting these claims and Appellant respectfully requests reversal of the rejections of independent claims 1, 55, 83, 99 and 115.

2. The Rejections of Dependent Claims 2-9, 11-18, 56-72, 84-98, 100-114 and 116-130

Appellant notes that because the remaining pending dependent claims each depends upon one of independent claims 1, 55, 83, 99 or 115, and thus include all of the limitations of the independent claims upon which they respectively depend upon, dependent claims 2-9, 11-18, 56-72, 84-98, 100-114 and 116-130 are each also not rendered obvious under 35 U.S.C. § 103(a) for at least the same reasons as those presented above. The Examiner therefore erred in rejecting these claims and Appellant respectfully requests reversal of the rejections of claims 2-9, 11-18, 56-72, 84-98, 100-114 and 116-130.

i. Dependent Claims 12, 66, 93, 109, and 125

Also, with regard to dependent claims 12, 66, 93, 109, and 125, it was stated in the Office Action that,

> Cometto discloses *selecting the port to transmit the frame based on source routing information contained in the frame* (Col.2 lines 7-8 the fibre channel frame identifying the source fibre channel switch and a destination - where the source and destination information is used to route the frame).

[1] *See* Office Action, ¶ 1, p. 4.

Office Action, ¶ 1, p. 7. Appellant respectfully traverse the rejection, noting that although Cometto teaches that, "[t]he processor is operable to provide a fibre channel frame identifying the source fibre channel switch and a destination" (Cometto, col. 2, ll. 6-8), Cometto is silent as to how the frame is routed, i.e., whether normal routing or source routing is used to actually route the received frame. Cometto thus does not teach or suggest a fabric manager that is configured to select a port based on either normal routing rules or source routing information within the received frame, as required by the claims.

For at least these reasons, and in addition to the reasons already presented, Appellant submits that none of the cited art teaches all of the limitations of dependent claims 12, 66, 93, 109, and 125 and thus the Examiner erred in rejecting these claims. Appellant therefore respectfully requests reversal of the rejection of claims 12, 66, 93, 109, and 125.

C. The Rejections Under 35 U.S.C. § 103(a) of Dependent Claims 2-7, 56-61, 84-89, 100-105 and 116-121 as Unpatentable Over Cometto in view of Trott as applied to claims 1, 55, 83, 99 and 115 and Further in View of Soumiya (U.S. Pat. No. 6,671,257)

Appellant further notes, with regard to dependent claims 2-7, 56-61, 84-89, 100-105 and 116-121 that it was stated in the Office Action that,

> Soumiya discloses *the information including transmit and receive rates based on a first defined period and a second defined period that is greater than the first defined period and the number of frames and words transmitted and received* (Fig.26 ref. 8~9 is a rate field, Col.26 lines 21-23 the rate changing unit may change the explicit rate that the rate calculating unit calculates at a

> predetermined ratio and Col.35 lines 21-36 the prolongment of the observation period means that an interval between ER calculation times becomes longer. The capability for calculating the ER in an observation period which is shorter than a specified observation period and Col.7 lines 27-28 "an arrived cell number counter for counting a number of arrived cells in correspondence with an output channel" where calculating the transmission rate also contains information about the amount of frames and words transmitted).

Office Action, ¶ 2, pp. 8-9. Appellant respectfully traverses these rejections, noting that the single explicit rate field of the RM cell taught by Soumiya does not represent both the transmit and receive rates of a port receiving a frame to which the rates are added. The explicit rate value certainly does not also simultaneously represent the speed of the port receiving the frame, the port itself, and the transmit and receive rates of the port based on two different time periods. These are all distinct values that are each required by the various dependent claims to be added to the received frame by the claimed switch. The explicit rate field taught by Soumiya is not analogous to any of these values, let alone two or more of them at the same time. And even if the explicit rate fields were analogous to transmit and receive rates, there is no indication to include two such values based on different periods as required by the claims.

For at least these reasons, and in addition to the reasons already presented, Appellant submits that none of the cited art teaches all of the limitations of dependent claims 2-7, 56-61, 84-89, 100-105 and 116-121, and thus the Office Action erred in rejecting these claims. Appellant therefore respectfully requests reversal of the rejections of claims 2-7, 56-61, 84-89, 100-105 and 116-121.

D. The Rejections Under 35 U.S.C. § 103(a) of Dependent Claims 13, 67, 94, 110 and 126 as Unpatentable Over Cometto in view of Trott as applied to claims 12, 30, 48 and 66, and Further in View of Wong (U.S. Pat. No. 6,363,077)

Appellant notes that because the remaining pending dependent claims each depends upon one of independent claims 1, 55, 83, 99 or 115, and thus include all of the limitations of the independent claims upon which they respectively depend upon, dependent claims 13, 67, 94, 110

and 126 are each also not rendered obvious under 35 U.S.C. § 103(a) for at least the same reasons as those presented above.

Appellant further notes, with regard to these dependent claims, that it was stated in the Office Action that,

> Wong discloses *using normal routing rules if the source routing information does not indicate a device directly connected to the switch* (Col.9 lines 53-67 If the destination port is a local network port of the current receiving device, only a local transaction must be processed. If the destination port is a network port of a device of the fabric other than the current receiving device, the data packet must be transferred from the current receiving device to the destination device via the data ring by processing).

Office Action, ¶ 3, p. 10. As well known to those in the art, source routing involves the source including the routing information into the packet itself, rather than the use of routing tables at each device. Appellant respectfully traverses the rejections, noting that there is no indication in the cited text that the transfer of the data packet via the ring taught by Wong is performed using source routing. Indeed, Wong does not even mention source routing. In fact, Wong specifically uses a packet routing table to determine how to forward the packet. Thus, Wong actually teaches away.

For at least these reasons, and in addition to the reasons already presented, Appellant submits that none of the cited art teaches all of the limitations of dependent claims 13, 67, 94, 110 and 126, and thus the Examiner erred in rejecting these claims. Appellant therefore respectfully requests reversal of the rejections of claims 13, 67, 94, 110 and 126.

E. The Rejections Under 35 U.S.C. § 103(a) of Dependent Claims 14, 68, 95, 111 and 127 as Unpatentable Over Cometto in View of Trott as Applied to Claims 12, 30, 48 and 66, and Further in View of Fredericks (U.S. Pat. No. 6,347,334)

Appellant notes that because the remaining pending dependent claims each depends upon one of independent claims 1, 55, 83, 99 or 115, and thus include all of the limitations of the

independent claims upon which they respectively depend upon, dependent claims 14, 68, 95, 111 and 127 are each also not rendered obvious under 35 U.S.C. § 103(a) for at least the same reasons as those presented above. The Office Action therefore erred in rejecting these claims and Appellant respectfully requests reversal of the rejections of claims 14, 68, 95, 111 and 127.

F. The Rejections Under 35 U.S.C. § 103(a) of Dependent claims 15, 69, 96, 112 and 128 as unpatentable under 35 U.S.C. § 103(a) over Cometto in View of Trott as Applied to Claims 12, 30, 48 and 66, and further in view of Kanetake (U.S. Pat. App. Pub. No. 2003/0137978)

Appellant notes that because the remaining pending dependent claims each depends upon one of independent claims 1, 55, 83, 99 or 115, and thus include all of the limitations of the independent claims upon which they respectively depend upon, dependent claims 15, 69, 96, 112 and 128 are each also not rendered obvious under 35 U.S.C. § 103(a) for at least the same reasons as those presented above. The Office Action therefore erred in rejecting these claims and Appellant respectfully requests reversal of the rejections of claims 15, 69, 96, 112 and 128.

G. Conclusion

Appellant believes that no extensions of time or fees are required, beyond those that may otherwise be provided in documents accompanying this response. Nonetheless, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fees required (including fees for net addition of claims) are hereby authorized to be charged to Wong Cabello's Deposit Account No. 50-1922, referencing docket number 112-0124US.

Respectfully submitted,

February 9, 2011

Filed Electronically

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VIII. CLAIMS APPENDIX

1. (Previously Presented) A Fibre Channel switch, comprising:

a plurality of ports configured to receive and transmit a frame; and

a fabric manager coupled to the plurality of ports to obtain the received frame and to provide a frame to be transmitted, the fabric manager configured to add information to the frame; the information including receive and transmit port identity, the switch identity, and measured transmit and receive rates of the port receiving the frame; and to provide the frame for transmission;

wherein the measured transmit and receive rates of the port are determined from an amount of data respectively transmitted and received by the port during a defined time period.

2. (Original) The switch of claim 1, the information further including the speed of the port receiving the frame and the link cost of a link connected to the transmit port.

3. (Previously Presented) The switch of claim 1, the information further including the port transmitting the frame.

4. (Previously Presented) The switch of claim 3, wherein the transmit and receive rates are based on a first defined time period.

5. (Previously Presented) The switch of claim 4, the information further including transmit and receive rates of the port receiving the frame and the port transmitting the frame based on a second defined time period, the second defined time period being greater than the first defined time period.

6. (Previously Presented) The switch of claim 5, the information further including the number of frames transmitted and received by the port receiving the frame and the port transmitting the frame.

7. (Previously Presented) The switch of claim 4, the information further including the number of frames transmitted and received by the port receiving the frame and the port transmitting the frame.

8. (Original) The switch of claim 1, wherein the frame has an original source and an original destination and wherein the fabric manager is configured to add the information to the frame when the frame is traveling from the original source to the original destination.

9. (Original) The switch of claim 8, wherein the fabric manager is configured to add the information to the frame when the frame is traveling from the original destination to the original source.

10. (Cancelled)

11. (Original) The switch of claim 1, wherein the fabric manager is configured to select the port to transmit the frame based on normal routing rules.

12. (Original) The switch of claim 11, wherein the frame contains source routing information and wherein the fabric manager is configured to select the port to transmit the frame based on the source routing information.

13. (Original) The switch of claim 12, wherein the fabric manager is configured to use normal routing rules if the source routing information does not indicate a device directly connected to the switch.

14. (Previously Presented) The switch of claim 11, wherein the frame is destination addressed to a well known address, and wherein the fabric manager is configured to determine a destination address by retrieving data from the frame payload.

15. (Original) The switch of claim 1, wherein there are a plurality of equal cost routes that can be used for transmitting the frame and wherein the fabric manager is configured to transmit the frame over all of such routes.

16. (Previously Presented) The switch of claim 1, wherein the frame is an extended link services frame.

17. (Original) The switch of claim 1, wherein the fabric manager is configured to determine if the switch is the original destination of the frame, and if so, modify the frame to cause it to return to the original source.

18. (Original) The switch of claim 1, wherein the fabric manager is configured to determine if the switch was the original source of the frame, and if so, to capture the frame and not further transmit the frame.

19. – 54. (Cancelled)

55. (Previously Presented) A method performed by a Fibre Channel switch, the method comprising:

receiving a frame;

determining measured transmit and receive rates of the port receiving the frame from the amount of data respectively transmitted and received by the port during a defined time period;

adding information to the frame, the information including receive and transmit port identity, the switch identity, and the measured transmit and receive rates of the port receiving the frame; and

providing the frame to a port for transmission.

56. (Original) The method of claim 55, the information further including the speed of the port receiving the frame and the link cost of a link connected to the port.

57. (Previously Presented) The method of claim 55, the information further including the port transmitting the frame.

58. (Previously Presented) The method of claim 57, wherein the transmit and receive rates are based on a first defined time period.

59. (Previously Presented) The method of claim 58, the information further including transmit and receive rates of the port receiving the frame and the port transmitting the frame based on a second defined time period, the second defined time period being greater than the first defined time period.

60. (Previously Presented) The method of claim 59, the information further including the number of frames transmitted and received by the port receiving the frame and the port transmitting the frame.

61. (Previously Presented) The method of claim 58, the information further including the number of frames transmitted and received by the port receiving the frame and the port transmitting the frame.

62. (Original) The method of claim 55, wherein the frame has an original source and an original destination and the information is added to the frame when the frame is traveling from the original source to the original destination.

63. (Original) The method of claim 62, wherein the information is added to the frame when the frame is traveling from the original destination to the original source.

64. (Cancelled)

65. (Original) The method of claim 55, wherein the port selected to transmit the frame is based on normal routing rules.

66. (Original) The method of claim 65, wherein the frame contains source routing information and wherein the port selected to transmit the frame is based on the source routing information.

67. (Original) The method of claim 66, wherein normal routing rules are used if the source routing information does not indicate a device directly connected to the switch.

68. (Previously Presented) The method of claim 65, wherein the frame is destination addressed to a well known address, and wherein a true destination address is determined by retrieving data from the frame payload.

69. (Original) The method of claim 55, wherein there are a plurality of equal cost routes that can be used for transmitting the frame and wherein the frame is transmitted over all of such routes.

70. (Previously Presented) The method of claim 55, wherein the frame is an extended link services frame.

71. (Original) The method of claim 55, further comprising:

determining if the switch is the original destination of the frame, and if so, modifying the frame to cause it to return to the original source.

72. (Original) The method of claim 55, further comprising:

determining if the switch was the original source of the frame, and if so, to capturing the frame and not further transmitting the frame.

73.- 82. (Cancelled)

83. (Previously Presented) A switch, comprising:

a fabric manager configured to add information to a frame; the information including receive and transmit port identity, the switch identity, and measured transmit and receive rates of a port receiving the frame; and to provide the frame for transmission;

wherein the measured transmit and receive rates of the port are determined from an amount of data respectively transmitted and received by the port during a defined time period.

84. (Previously Presented) The switch of claim 83, the information further including the speed of a port receiving the frame and the link cost of a link connected to a transmit port.

85. (Previously Presented) The switch of claim 83, the information further including the port transmitting the frame.

86. (Previously Presented) The switch of claim 85, wherein the transmit and receive rates are based on a first defined time period.

87. (Previously Presented) The switch of claim 86, the information further including transmit and receive rates of the port receiving the frame and a port transmitting the frame based on a second defined time period, the second defined time period being greater than the first defined time period.

88. (Previously Presented) The switch of claim 87, the information further including the number of frames transmitted and received by the port receiving the frame and the port transmitting the frame.

89. (Previously Presented) The switch of claim 86, the information further including the number of frames transmitted and received by the port receiving the frame and a port transmitting the frame.

90. (Previously Presented) The switch of claim 83, wherein the frame has an original source and an original destination and wherein the fabric manager is configured to add the information to the frame when the frame is traveling from the original source to the original destination.

91. (Previously Presented) The switch of claim 90, wherein the fabric manager is configured to add the information to the frame when the frame is traveling from the original destination to the original source.

92. (Previously Presented) The switch of claim 83, wherein the fabric manager is configured to select a port to transmit the frame based on normal routing rules.

93. (Previously Presented) The switch of claim 92, wherein the frame contains source routing information and wherein the fabric manager is configured to select the port to transmit the frame based on the source routing information.

94. (Previously Presented) The switch of claim 93, wherein the fabric manager is configured to use normal routing rules if the source routing information does not indicate a device directly connected to the switch.

95. (Previously Presented) The switch of claim 92, wherein the frame is destination addressed to a well known address, and wherein the fabric manager is configured to determine a destination address by retrieving data from the frame payload.

96. (Previously Presented) The switch of claim 83, wherein there are a plurality of equal cost routes that can be used for transmitting the frame and wherein the fabric manager is configured to transmit the frame over all of such routes.

97. (Previously Presented) The switch of claim 83, wherein the fabric manager is configured to determine if the switch is the original destination of the frame, and if so, modify the frame to cause it to return to the original source.

98. (Previously Presented) The switch of claim 83, wherein the fabric manager is configured to determine if the switch was the original source of the frame, and if so, to capture the frame and not further transmit the frame.

99. (Previously Presented) A method performed by a switch, the method comprising:

determining measured transmit and receive rates of a port receiving a frame from an amount of data respectively transmitted and received by the port during a defined time period;

adding information to the frame, the information including receive and transmit port identity, the switch identity, and the measured transmit and receive rates of the port receiving the frame; and

providing the frame to a port for transmission.

100. (Previously Presented) The method of claim 99, the information further including the speed of the port receiving the frame and the link cost of a link connected to the port.

101. (Previously Presented) The method of claim 99, the information further including the port transmitting the frame.

102. (Previously Presented) The method of claim 101, wherein the transmit and receive rates are based on a first defined time period.

103. (Previously Presented) The method of claim 102, the information further including transmit and receive rates of the port receiving the frame and the port transmitting the frame based on a second defined time period, the second defined time period being greater than the first defined time period.

104. (Previously Presented) The method of claim 103, the information further including the number of frames transmitted and received by the port receiving the frame and the port transmitting the frame.

105. (Previously Presented) The method of claim 102, the information further including the number of frames transmitted and received by the port receiving the frame and the port transmitting the frame.

106. (Previously Presented) The method of claim 99, wherein the frame has an original source and an original destination and the information is added to the frame when the frame is traveling from the original source to the original destination.

107. (Previously Presented) The method of claim 106, wherein the information is added to the frame when the frame is traveling from the original destination to the original source.

108. (Previously Presented) The method of claim 99, wherein the port selected to transmit the frame is based on normal routing rules.

109. (Previously Presented) The method of claim 108, wherein the frame contains source routing information and wherein the port selected to transmit the frame is based on the source routing information.

110. (Previously Presented) The method of claim 109, wherein normal routing rules are used if the source routing information does not indicate a device directly connected to the switch.

111. (Previously Presented) The method of claim 108, wherein the frame is destination addressed to a well known address, and wherein a true destination address is determined by retrieving data from the frame payload.

112. (Previously Presented) The method of claim 99, wherein there are a plurality of equal cost routes that can be used for transmitting the frame and wherein the frame is transmitted over all of such routes.

113. (Previously Presented) The method of claim 99, further comprising:

determining if the switch is the original destination of the frame, and if so, modifying the frame to cause it to return to the original source.

114. (Previously Presented) The method of claim 99, further comprising:

determining if the switch was the original source of the frame, and if so, to capturing the frame and not further transmitting the frame.

115. (Previously Presented) A switch, comprising:

means for determining measured transmit and receive rates of a port receiving a frame from an amount of data respectively transmitted and received by the port during a defined time period;

means for adding information to the frame, the information including receive and transmit port identity, the switch identity, and the measured transmit and receive rates of the port receiving the frame; and

means for providing the frame to a port for transmission.

116. (Previously Presented) The switch of claim 115, the information further including the speed of the port receiving the frame and the link cost of a link connected to the port.

117. (Previously Presented) The switch of claim 115, the information further including the port transmitting the frame.

118. (Previously Presented) The switch of claim 117, wherein the transmit and receive rates are based on a first defined time period.

119. (Previously Presented) The switch of claim 118, the information further including transmit and receive rates of the port receiving the frame and the port transmitting the frame based on a second defined time period, the second defined time period being greater than the first defined time period.

120. (Previously Presented) The switch of claim 119, the information further including the number of frames transmitted and received by the port receiving the frame and the port transmitting the frame.

121. (Previously Presented) The switch of claim 118, the information further including the number of frames transmitted and received by the port receiving the frame and the port transmitting the frame.

122. (Previously Presented) The switch of claim 115, wherein the frame has an original source and an original destination and the information is added to the frame when the frame is traveling from the original source to the original destination.

123. (Previously Presented) The switch of claim 122, wherein the information is added to the frame when the frame is traveling from the original destination to the original source.

124. (Previously Presented) The switch of claim 115, wherein the port selected to transmit the frame is based on normal routing rules.

125. (Previously Presented) The switch of claim 124, wherein the frame contains source routing information and wherein the port selected to transmit the frame is based on the source routing information.

126. (Previously Presented) The switch of claim 125, wherein normal routing rules are used if the source routing information does not indicate a device directly connected to the switch.

127. (Previously Presented) The switch of claim 124, wherein the frame is destination addressed to a well known address, and wherein a true destination address is determined by retrieving data from the frame payload.

128. (Previously Presented) The switch of claim 115, wherein there are a plurality of equal cost routes that can be used for transmitting the frame and wherein the frame is transmitted over all of such routes.

129. (Previously Presented) The switch of claim 115, further comprising:

determining if the switch is the original destination of the frame, and if so, modifying the frame to cause it to return to the original source.

130. (Previously Presented) The switch of claim 115, further comprising:

determining if the switch was the original source of the frame, and if so, to capturing the frame and not further transmitting the frame.

IX. EVIDENCE APPENDIX

None.

X. RELATED PROCEEDINGS APPENDIX

None.